REMARKS

Reconsideration of the application is respectfully requested for the following reasons:

1. Formalities

The specification has been revised to correct a few minor grammatical and idiomatic errors. Because the changes are all formal in nature, it is respectfully submitted that the changes do not involve new matter.

2. Rejection of Claims 1-6 Under 35 USC §112, 2nd Paragraph

This rejection has been addressed by amending claim 1 to clarify that the "first predefined value" is a first example of the at least one predefined value recited earlier in the claim.

3. Rejection of Claims 1-5 and 7-10 Under 35 USC §103(a) in view of U.S. Patent Nos. 4,161,031 (Olander), 6,453,334 (Vinson), and 5,815,702 (Kannan)

This rejection is respectfully traversed on the grounds that the Olander, Vinson, and Kannan patents each fails to disclose or suggest, whether considered individually or in any reasonable combination, a calculator having an internal interrupt detector and counter for **stopping processing** only when a user responds positively to a termination query, as claimed, and for continuing processing until the completion of a calculation during and after the query unless the user requests termination in response to the prompt.

According to the claimed invention, when processing of an expression takes an excessive amount of time, a termination message is displayed *without stopping processing*. The termination message asks if the user wishes to stop the processing. If the user does wish to stop processing, a "yes" response to the termination message causes an interrupt to be sent to the interrupt detector in order to stop the processing. If the user wishes to stop the processing, however, a "no" response to the termination message will cause the processing to continue without ever having stopped, and a second counter to start counting a second time period. In the

meantime, the display will indicate that processing is in fact proceeding, thereby re-assuring the user that the calculator has not "crashed."

The claimed invention therefore provides a way to monitor the progress of a long calculation and queries the user as to whether he or she wishes to stop processing, without actually stopping processing unless the user chooses option "Y" in response to a termination query. The termination query is displayed whenever the processing is proceeding normally but an excessive amount of time has elapsed. It has nothing to do with continuation of processing when an error has occurred, as in the Kannan patent, or of prompting the user to request an extension of time from an authentication server (*i.e.*, to buy more time or check the user's account) after a time-out in the context of a remote application server.

According to the claimed invention, **the termination query is made at a predetermined time during a calculation, rather than after a time-out resulting from excessive use of a remote server, and processing continues during the termination query and only stops when the user positively indicates that stoppage should occur**. In contrast:

a. the Olander patent discloses stoppage of processing and display of an error message when an error is detected–there is no disclosure of a termination query that occurs during processing, much less of continuing processing during display of the termination query;

b. the Vinson patent discloses automatic stoppage of processing after a time out occurs–again, there is no disclosure of a termination query or continuing processing during display of a termination query (see Fig. 2D, steps 258 and 260); and

c. the Kannan patent discloses a method of enabling processing to continue in a computer unless a fatal error has occurred, but not of displaying a termination query and continuing processing if termination is not selected (if a fatal error occurs, processing will stop irrespective of a user desire to continue processing,

while if a fatal error has not occurred, processing will continue without any sort of query being generated).

According to the Examiner, modification of the calculator of Olander to include a user query responsive to processing time and continuation of processing unless the user responds in a certain way to the query would have been obvious because Vinson teaches proper allocation of system resources by prompting a user for additional time at a timeout, and because Kannan teaches continuation of processing except when a fatal error occurs. However, prompting a user for additional time at timeout, as taught by Vinson, is actually the **opposite** of the claimed method.

In Vinson, a so-called death-watch thread cuts-off processing of a execution of a remote program if execution is taking too long. The passage in col. 8, lines 43-50 of Vinson, cited by the Examiner, merely discloses that upon termination of the process, the user can request more time from an authentication server, at which time the death-watch begins again. This is because Vinson is concerned with excessive use of a remote application server, and in particular the problem of obtaining payment for such use. The user is given the option of extending user time, but since the prompt occurs at time-out and must be authenticated, there is no reason for processing to continue during this time. In Vinson, the concern is with making sure that the user does not get more time on the remote server than the time to which he or she is entitled, whereas the claimed invention (and Olander) involves a personal calculator in which time-sharing is not an issue, the concern being simply that the user might not want to wait for the calculation to finish.

On the other hand, Kannan's termination of processing when a fatal error occurs is executed **irrespective** of user wishes, while continuation of processing proceeds without a query so long as the error is not fatal. This also is essentially contrary to the claimed invention, which is concerned with distinguishing calculations that take an excessive amount of time from crashes.

The Kannan system is used in the context of a personal computer, and has to do with minimizing the number of crashes.

The Olander patent is not concerned with errors or crashes, and therefore the teachings of Vinson and Kannan concerning error-recovery are not applicable, and would not have been recognized as such by the ordinary artisan at the time the present invention was made. At best, Vinson suggests modification of the calculator of Olander to terminate processing when an error occurs, while Kannan refines the teaching of Vinson by suggesting termination of processing only when a fatal error occurs. **Neither the Vinson patent nor the Kannan patent is reasonably suggestive of modifying the calculator of Olander to simply prompt a user for termination if execution of a program has taken a predetermined amount of time, even though no error has occurred.**

Since none of the three references applied in this rejection discloses or suggests the claimed termination query, continued processing during the termination query, and stoppage of processing if and only if the user requests stoppage, it is respectfully submitted that no combination of the three patents could have suggested the claimed query and continuation of processing unless the user requests stoppage. As a result, withdrawal of the rejection of claims 1-5 and 7-10 in view of the Olander, Vinson, and Kannan patents is respectfully requested.

4. Rejection of Claims 6 and 11 Under 35 USC §103(a) in view of U.S. Patent Nos. 4,161,031 (Olander), 6,453,334 (Vinson), and 5,815,702 (Kannan), and "*Structure Computer Organization*" (Stanenbaum)

This rejection is respectfully traversed on the grounds that the Stanenbaum article, like the Olander, Vinson, and Kannan patents, fails to disclose or suggest a calculator having an internal interrupt detector and counter for stopping processing only when a user responds positively to a termination query, as claimed, while continuing processing without interruption if the user does not respond positively to the termination query. In addition, the Stanenbaum article fails to disclose verification of the expression to be calculated is in proper logical form

before calculating the expression. Instead, the Stanenbaum article merely teaches that it is possible to substitute, under the circumstances described therein, hardware for software.

Because none of the references applied against claims 6 and 11 discloses or suggests the claimed termination query to enable **a user** to request stoppage of processing after an extended period of time (as opposed to stoppage based on processing error detection) *without interrupting the processing if the user wants the calculator to finish the calculation*, it is respectfully submitted that the rejection of claims 6 and 11 under 35 USC §103(a) is improper and withdrawal of the rejection is respectfully requested.

Having thus overcome each of the rejections made in the Official Action, withdrawal of the rejections and expedited passage of the application to issue is requested.

Respectfully submitted,

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